

### **REMARKS**

Claims 6-10 and 13-22 are pending.

Applicants respectfully submit that claims 6-10 and 13-17 as amended by the April 7, 2004 Response are directed to the originally elected invention for the reasons discussed below. However, in order to expedite prosecution, Applicants have amended claims 6 and added new claims 18-22, such that the "single-crystalline structure" is removed from claim 6 and added to new independent claim 18. Applicants note that new claims 18-22 are directed to claims 13-17 as they existed before the April 7, 2004 Amendment. Thus, the amendments are supported by the specification and the claims as originally filed. No new matter is added. Applicants respectfully request consideration of these claims.

Applicants apologize for any confusion regarding the definitions of "single crystalline structure" and "single crystal." Accordingly, Applicants emphasize that a "single crystalline structure" has a uniform crystalline structure with no grain from one end of the ferromagnetic compound to the other end. However, as noted by the Examiner, "single crystalline structure" may mean a single crystal.

### **Claims Withdrawn from Consideration**

The January 30, 2004 Office Action withdrew the past claims 13-17 (now claims 18-22), which existed before the April 7, 2004 Amendment, from consideration, asserting that claims 6-10 (same as existing claims 6-10) and 13-17 (same as existing claims 18-22) were patentably distinct and that an Office Action on the merits had

already been rendered for claims 6-10. Applicants respectfully traverse the withdrawal of claims 13-17 from consideration.

The Office Action asserted that claims 6-10 and claims 13-17 were patentably distinct because the method of adjusting the ferromagnetic characteristics of a ZnO-type compound "in the form of a single crystal" according to pre-amendment claims 13-17 was unrelated to the method of adjusting the ferromagnetic characteristics of a ZnO-type compound according to pre-amendment claims 6-10, as these methods are "not usable together and they have different effects" (January 30, 2004 Office Action, page 2, lines 5-9).

However, Applicants respectfully note that claim 6 is drawn to a method of adjusting the ferromagnetic characteristics of a "ferromagnetic ZnO-type compound." Further, the specification notes that "by adjusting densities or mixing ratios of these transition metallic elements, a **single-crystalline and ferromagnetic ZnO-type compound** exhibiting desired magnetic characteristics may be obtained" (Specification, page 5, lines 4-7) (emphasis added). Thus, as the specification of the present application discloses that the "ferromagnetic ZnO-type compound" of the presently claimed invention has a single-crystalline structure, it was **implicit** that the "ferromagnetic ZnO-type compound" recited in the claim 6 could have a single-crystalline structure. Meanwhile, claim 18 differs from claim 6 merely in that claim 18 **explicitly** requires the "ferromagnetic ZnO-type compound" to have a single-crystalline structure. The fact that the crystalline structure of the ferromagnetic ZnO-type compound is not recited in claims 6-10 does not necessarily mean that the

ferromagnetic ZnO-type compound recited in claims 6-10 does not have a single crystalline structure.

In order to be more explicit, claim 6 was amended in the April 7, 2004 Amendment, in which present claim 6 expressively states that the "ferromagnetic ZnO-type compound having a single-crystalline structure." However, as noted above, the requirement that the ferromagnetic ZnO-type compound have a single-crystalline structure has been removed in present claim 6 and placed in claim 18 in order to expedite prosecution.

Therefore, Applicants respectfully traverse the withdrawal of claims 13-17 and request that claims 6-10 and 13-22 be examined on the merits together.

Regardless, claim 6 does not specifically require a ferromagnetic ZnO-type compound to have a single-crystalline structure. Thus, claim 6 is broader than claim 18, in that the method of claim 18 falls within the method of claim 6. The method of claim 18 is thus a subgenus of the method of claim 6. Thus, claims 6-10 and 13-22 should not be subjected to a restriction requirement even if these claims are presented at the same time, as the subgenus method of claim 18 has already been examined on the merits by the examination of the broader method of claim 6. Thus, Applicants respectfully submit that there would be no extra burden in examining claims 13-22 along with claims 6-10. Further, the Office Action dated May 19, 2003 has already analyzed the merits of claims 6-10 and 13-17. Thus, the Patent Office has already examined and considered claims directed to single crystalline subject matter. Therefore, Applicants

again respectfully traverse the withdrawal of claims 13-17 and request that claims 6-10 and 13-22 be examined on the merits together.

Section 112, First Paragraph, Rejection

Claims 6-10 were rejected under 35 U.S.C. § 112, first paragraph, for lack of enablement. Applicants respectfully traverse the rejection.

The Office Action stated the following:

The declaration shows that only ZnO-type compounds in the form of a single crystal doped with the claimed elements will have ferromagnetic characteristics. Claims 6-10 do not require the claimed compound to be a single crystal. Given the declaration, one of ordinary skill would know the claimed method is not functional since the material resulting from the process is not and cannot be made ferromagnetic through doping.

(January 30, 2004 Office Action, page 3, third paragraph).

Applicants note that the Declaration filed on November 21, 2003 shows that the polycrystalline ZnO-type compound prepared according to the disclosure of Miyazaki et al. are not ferromagnetic, while the ZnO-type compound of the invention is ferromagnetic. Claim 6 recites a “method for adjusting ferromagnetic characteristics of a **ferromagnetic** ZnO-type compound,” so the method of claims 6-10 apply only to **ferromagnetic** ZnO-type compounds. Thus, claims 6-10 did not purport to apply the method to a non-ferromagnetic ZnO-type compound. Therefore, the Declaration should not raise any doubt on the fact that claims 6-10 are enabled.

In addition, the specification and drawings present data showing the adjustment of the ferromagnetic characteristics by controlling the amount or combination of dopants in a ferromagnetic ZnO-type compound. Thus, Applicants respectfully submit that those

of skill in the art would have known from the disclosure of the present application that the method of claims 6-10 would work for its intended purposes.

Claim 7 was rejected as non-enabled because the Examiner asserted that the method of claim 7 would not work since the application does not disclose the necessary amount and composition of the dopants. Applicants respectfully disagree. Figures 3 and 4 present examples of the necessary amount and composition of the dopants. Figures 3 and 4 were plotted with dopant amount on the abscissa and the ferromagnetic characteristic on the ordinate. Thus, the relation of ferromagnetic characteristics to the dopant composition and the dopant amount is clearly shown and exemplified in the application. Accordingly, Applicants submit that those of skill in the art would be able to practice the method of claim 7 by determining the dopant composition and dopant amount needed to achieve a target value of the ferromagnetic characteristic.

For the above reasons, Applicants respectfully request reconsideration and withdrawal of rejection of claims 6-10 under 35 U.S.C. § 112, first paragraph.

#### Conclusion

In view of the above amendments and reasoning, Applicants submit that the application is in a condition for allowance. A Notice of Allowance is believed in order.

In the event that the filing of this paper is not deemed timely, applicants petition for an appropriate extension of time. Any petition fee for the extension of time and any other fees that may be required in relation to this paper can be charged to Deposit Account No. 01-2300, referencing Docket No. 107400-00016.

Respectfully submitted,

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